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EXAMINER	
PAUL, DISLER	

ART UNIT	PAPER NUMBER
2615	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/689,645	Applicant(s) OGATA, SATOSHI	
	Examiner Disler Paul	Art Unit 2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7, 8, 10, 11, 18, 19 and 26-29 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7, 10, 11, 28 and 29 is/are allowed.
- 6) ☒ Claim(s) 8, 18-19, 26-27 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>10/22/03; 6/9/06; 8/17/07.</u> | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Response to Amendment

The examiner has considered the applicant's amendment over further prior arts, and thus claims certain claims are deemed allowable.

- a. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 18-19,26-27 are rejected under 35 U.S.C. 101 because

Claims 21 is pertained solely to a data structure without recitation of any step(s) to be performed on a computer or any process activity that ties to physical acts or data manipulation representing physical object or activities to achieve a practical application.

"Data structures **not claimed** as embodied in computer-readable media are descriptive material per se and **are not statutory** because they are not capable of causing functional change in the computer. See, e.g., Warmerdam, 33 F.3d at 1361, 31 USPQ2d at 1760 (Claim to a data structure per se held nonstatutory.). Such claimed data structures do not define any structural and functional interrelationships between the data structure and other claimed aspects of the invention which permit the data structure's functionality to be realized. In contrast, a claimed computer-readable medium encoded with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure's functionality to b realized, and is thus statutory." See Interim Guidelines on 35 USC 101, Annex IV (a): Functional Descriptive Material.

The applicant is suggested to changed the wording of the claims by adding:

" A computer readable medium encoded with a computer program or the like"

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 8,19,27 are rejected under 35 U.S.C. 102(e) as being unpatentable over Chrysanthakopoulos ("7,113,610 B1") and further in view of Kaji ("US 7,027,600 B1").

Re claim 8, Chrysanthakopoulos disclosed An audio information transforming method applied to a video/audio format in which a screen includes a plurality of objects and each object has video information, position information, and audio information ("fig.1-6; objects with sound, image and vector locations"), said method comprising the steps of: virtual listening point setting of setting a virtual listening point at a position different from a basic listening point that is set as a position at which a listener listens to an audio ("col.3 line 1-15; fig.4(VS,VSS), col.7 line 60-68"); and audio frequency transforming of executing an audio frequency transformation to add a Doppler effect to the audio information at the virtual listening point ("col.9 line 60 up to col.10 line 12; fig.5-6").

While, Chrysanthakopoulos disclose of the above, Chrysanthakopoulos fail to disclosed of the further limitation of the

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relative velocity calculating of calculating relative velocity between the virtual listening point and the object and executing the audio frequency transformation based on the relative velocity to add the Doppler effect to the audio information at the virtual listening point. However, Kaji et al. disclose of a virtual system of three-dimensional space wherein the further limitation of the relative velocity calculating of calculating relative velocity between the virtual listening point and the object and executing the audio frequency transformation based on the relative velocity to add the Doppler effect to the audio information at the virtual listening point ("col.5 line 5-10; fig.21-22;col.12 line 30-42 ") for the purpose of performing audio simulation by structuring a sound field spaced by combining spatial objects. Thus, taking the combined teaching of Chrysanthakopoulos and Kaji et al. as a whole, it would have been obvious for one of the ordinary skill in the art to modify Chrysanthakopoulos by incorporating the teaching of the relative velocity calculating of calculating relative velocity between the virtual listening point and the object and executing the audio frequency transformation based on the relative velocity to add the Doppler effect to the audio information at the virtual listening point for the purpose of performing audio simulation by structuring a sound field spaced by combining spatial objects.

The combined teaching of Chrysanthakopoulos and Kaji et al. as a whole, further teach of the wherein, in respect to a final image unit,

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the audio frequency transforming step is executed by adding the Doppler effect to the audio information at the virtual listening point by using a formula by which the audio frequency transformation of the audio information at the virtual listening point prior to the final image by one image unit is executed ("Kaji, col.12 eq. (7)/the formula is used in determining the Doppler effect").

Similarly, Re claims 19,27 have been analyzed and rejected with respect to claim 8 above.

Allowable Subject Matter

3. Claims 7,10-11,28-29 are allowed.

Re claim 7, while the combined teaching of Chrysanthakopoulos and Kaji et al. as a whole, disclosed of the audio information transforming method applied to a video/audio format in which a screen includes a plurality of objects and each object has video information, position information, and audio information, said method comprising the steps of: virtual listening point setting of setting a virtual

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listening point at a position different from a basic listening point that is set as a position at which a listener listens to an audio; and audio frequency transforming of executing an audio frequency transformation to add a Doppler effect to the audio information at the virtual listening point; the relative velocity calculating of calculating relative velocity between the virtual listening point and the object and executing the audio frequency transformation based on the relative velocity to add the Doppler effect to the audio information at the virtual listening point.

However, the combined teaching of Chrysanthakopoulos and Kaji et al. as a whole, teach of the above, they fail to disclose of the audio information including the Doppler effect previously is included in the object, the audio frequency transformation step executes the audio frequency transformation step execute an audio frequency transformation to cancel the Doppler effect included in the audio information of the object, and execute the audio frequency transformation based on the relative velocity to add the Doppler effect to the audio information of the virtual listening point.

Re claim 10, while the combined teaching of Chrysanthakopoulos and Kaji et al. as a whole, disclosed of the audio information transforming method applied to a video/audio format in which a screen includes a plurality of objects and each object has video information,

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position information, and audio information, said method comprising the steps of: virtual listening point setting of setting a virtual listening point at a position different from a basic listening point that is set as a position at which a listener listens to an audio; and audio frequency transforming of executing an audio frequency transformation to add a Doppler effect to the audio information at the virtual listening point; the relative velocity calculating of calculating relative velocity between the virtual listening point and the object and executing the audio frequency transformation based on the relative velocity to add the Doppler effect to the audio information at the virtual listening point.

However, the combined teaching of Chrysanthakopoulos and Kaji et al. as a whole, teach of the above, they fail to disclose of format comprising: velocity information of an object; said object is one of objects included on a screen; velocity information and direction information of a scene which is replayed on the screen; and reduced scale information of the screen every scene.

Similarly, claims 11, 28-29 are allowed because of the recitation of the same element as in claim 10 above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Disler Paul whose telephone number is 571-270-1187. The examiner can normally be reached on 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chin Vivian can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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